Palletising Bolster

The present invention relates to a palletising bolster and, in particular, to a bolster for facilitating the formation of a pallet from a stack of boards.

The known method of palletising a stack of boards, for example a stack of horizontal 2.4m (8 feet) by 1.2m (4 feet) MDF sheets, in order to make the stack transportable and manoeuvrable, is to support the stack on a plurality of elongate solid timber laths. The stack is then bound with steel strapping which extends around the stack and beneath the laths.

Typically, the laths are made from a plurality of elongate pieces of timber stacked vertically to give the desired height, the lengths being stapled together to form a solid lath. The elongate pieces may have various heights, for example between 75mm and 85mm.

Typically, an elongate timber infill piece is located between each lath and the corresponding steel strap. The infill piece has an elongate groove extending along the length of its underside so that the steel strapping securely locates in the groove in use.

Such known solid laths effectively support the weigh of a stack of MDF sheets. However, such known laths can be costly to manufacture due to the large quantity of timber required to make each lath and due to the necessity of stapling the individual timber strips together to give the desired height of lath. In

addition, the laths are heavy and can be awkward to manoeuvre for storage or use.

The present invention has been made from a consideration of the disadvantages associated with such known laths and in order to provide an improved bolster, which may overcome one or more of the above-mentioned disadvantages.

According to the invention there is provided a palletising bolster for facilitating the formation of a pallet from a stack of boards comprising first and second elongate strips extending substantially parallel to each other and spaced apart thereby defining a gap therebetween, a plurality of ribs extending between the strips at spaced apart locations along the length of the gap and endpieces located between respective corresponding ends of the first and second strips, wherein the endpieces are substantially longer than the ribs, in the longitudinal dimension of the bolster.

Preferably, the strips are of substantially rectangular cross-section and are oriented such that respective elongate principal faces of the strips face each other. Preferably, the ribs and the endpieces are substantially cuboid and are dimensioned to extend substantially across the width and height of the gap.

Preferably, the length of the endpieces is substantially three or four times the length of the ribs, in the longitudinal dimension of the bolster. Preferably, the endpieces comprise two or more superimposed cuboid sections, arranged on top of each

other to span the gap between the ends of the first and second strips.

Preferably, the bolster comprises timber, such as culled MDF board. Preferably, the elements of the bolster are secured together by glue.

Preferably, the material comprising the bolster of the invention occupies in the range of 35% to 55%, more preferably substantially 45%, of the volume defined by the length, width and height of the bolster.

According to the invention there is further provided a method of palletising a stack of boards using one or more palletising bolsters of the invention comprising the steps of supporting the stack on a plurality of such bolsters arranged at spaced apart locations along a length of the stack and binding the stack with a plurality of steel straps such that the straps extend around the stack and beneath corresponding bolsters.

The invention will now be described further, by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is a side view of a prior art palletising lath;

Fig. 2 is a side view of a palletising bolster according to the invention;

Fig. 3 is a perspective view showing a stack of boards palletised using prior art laths of figure 1; and

Fig. 4 is a perspective view from underneath showing the palletised stack of boards of figure 3.

Referring to figure 1, a known bolster 1, which is the standard for the industry, comprises a rectangular cross-section elongate lath which is typically 70mm wide, 80mm high and can vary in length from 1m to 2m.

The lath is made from a plurality of elongate pieces of timber 2 stacked vertically and stapled together to give the desired height. The elongate pieces may have various heights, for example between 18mm and 85mm.

Referring to figures 3 and 4, a stack of boards 4, typically comprising a plurality of MDF sheets, has conventional bolsters 1 fitted and held on by steel strapping 6 thereby palletising the unit.

In use, a stack of boards 4, typically MDF sheets, is palletised by supporting the stack on a plurality of bolsters 1 at spaced apart locations along the length of the stack. The bolsters 1 extend transversely to the elongate dimension of the boards 4. The stack is then bound with a series of steel straps 6 which extend around the stack and beneath corresponding bolsters 1.

An elongate timber infill piece 8 is located between each bolster 1 and the corresponding steel strap 6. The infill piece 8 has an elongate groove 9 extending along the length of its underside so that the steel strap 6 securely locates in the groove in use.

Referring to figure 2, a palletising bolster of the invention 10 comprises first and second elongate strips 12 of substantially rectangular cross-section. The strips 12 extend substantially parallel to each other and are spaced apart thereby defining a gap 14 therebetween. The strips are oriented such that respective elongate principal faces of the strips face each other.

A series of spacing ribs or struts 16 extend between the strips 12 at, typically regular, spaced apart locations along the length of the gap 14. Typically, four such struts 16 are provided. The struts are substantially cuboid and are dimensioned to extend substantially across the width and height of the gap.

Endpieces 18 are located between respective corresponding ends of the upper and lower strips 12. The endpieces 18 are substantially cuboid and are dimensioned to extend substantially across the width and height of the gap 14. The endpieces 18 are substantially longer than the struts 16, in the longitudinal dimension of the bolster, typically being three or four times the length of the struts. Thus, the endpieces give substantial load bearing strength to the bolster.

The endpieces 18 may comprise two or more superimposed cuboid sections 19, arranged on top of each other to span the gap between the ends of the upper and lower strips.

Typically, the various elements of the bolster comprise timber, for example culled MDF board. Typically, the various elements of the bolster are secured together by glue so that staples are not required.

Typically, the bolster of the invention is made to be between 1m and 2m long, more preferably 1.5m (5 feet) long, and 70mm to 100mm (3 to 4 inches) high. The width is typically in the range of 60mm to 100mm, more preferably 70mm. Typically, the height of the elongate strips is in the range 6mm to 30mm. More specifically, the height of the upper elongate strip is preferably in the range 6mm to 30mm, most preferably 6mm, and the height of the lower elongate strip is preferably in the range 18mm to 30mm, most preferably 18mm. Such dimensions have been found to give the desired load bearing capacity.

In order to achieve good load bearing capacity while minimising the amount of material used in the bolster, typically an optimum number of ribs is used for any particular length of bolster. For example, too few ribs might lead to collapse under load whereas too many ribs is wasteful of material. Typically, it has been found that a spacing of between 150mm and 300mm (6 to 12 inches) between adjacent ribs provides good load bearing capacity while minimising waste. More preferably, the optimum rib spacing is 210mm (8.5 inches).

Typically, the length of the struts and endpieces, in the longitudinal dimension of the bolster, are substantially in the ranges 30mm to 50mm and 100mm to

140mm, respectively. Typically, the bolster of the invention uses only about 45% of the material of conventional solid bolsters and is correspondingly about 45% of the weight. Thus, typically, the material comprising the bolster of the invention occupies in the range of 35% to 55%, more typically 45%, of the volume defined by the length, width and height of the bolster.

In use, the bolster 10 of the invention is used to replace the known bolster 1 for palletising a stack of boards as described with reference to figure 3 and 4.

The stack of boards 4 is palletised by supporting the stack on a plurality of bolsters 10 of the invention at spaced apart locations along the length of the stack. The bolsters 10 extend transversely to the elongate dimension of the boards 4. The stack is then bound with a series of steel straps 6 which extend around the stack and beneath corresponding bolsters 10.

An elongate timber infill piece 8 may be located between each bolster 10 and the corresponding steel strap 6 such that the strap securely locates in the groove 9.

Thus, the invention provides a palletising bolster, skid or support which is more efficient than conventional bolsters, uses less material, thereby being more cost effective to manufacture, and weighs considerably less than traditional bolsters thereby being easier to use and manoeuvre. At the same time, the palletising bolster of the invention has good load bearing capacity and effectively supports traditional

loads such as stacks of several 2.4m by 1.2m MDF sheets.

In general, as MDF manufacturers become more efficient, there is not enough culled MDF board available for manufacturing the conventional solid bolster so that the bolster of the invention becomes more significant.

Since, typically, factory production rates are in the order of several tens of thousand bolsters per month, the associated cost saving and efficiency achieved using the bolster of the invention can be considerable compared with the conventional standard solid bolster which is 55% heavier.

It will be appreciated that the descriptions of heights, depths, widths and lengths are intended to refer to the orientation of the bolster during normal use to support a stack and correspond to the orientation shown in the figures.

It will be appreciated that the present invention is not intended to be restricted to the details of the above embodiment, which is described by way of example only.